

Patent [19]

[11] Patent Number: 11123316

[45] Date of Patent: May. 11, 1999

[54] APPARATUS FOR PRODUCING ULTRA-PURE AIR

[21] Appl. No.: 09289843 JP09289843 JP

[22] Filed: Oct. 22, 1997

[51] Int. Cl.⁶ B01D05386 ; B01D04600; B01D05334; B01D05381; F24F00706

[57] ABSTRACT

PROBLEM TO BE SOLVED: To collect/remove chemical pollutants existing in the air to be supplied into a clean room and others together with particulates safely and efficiently by passing raw air containing chemical substances from the introduction side through a particle filter layer, a photocatalyst holding layer, an ion exchange fiber packing layer in turn.

SOLUTION: Raw air 2 containing pollutants generated in a clean room 1 is sucked continuously into an ultra-pure air producing apparatus 8 by a blower 3. First, particulates are collected/removed a particle filter layer 4. Next, after the passage through an ultraviolet light source irradiation chamber 5 installed in a purification route, neutral substances in chemical pollutants are collected/removed by as photocatalyst holding layer 6, and acidic gas and/or alkaline gas in the pollutants and components ionized by the layer 6 are collected/removed by an ion exchange fiber packing layer 7. Ultra-pure air 9 after removal of the pollutants is circulated in the clean room 1. Efficient purification is attained, and microorganisms in the raw air 2 can be sterilized semi-perpetually by the layer 6 and the chamber 5.
